

# Notice of Allowability

## Application No.

09/829,110

## Examiner

Philip C Tucker

## Applicant(s)

PALMER ET AL.

## Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment of 6/14/04.
2. ☒ The allowed claim(s) is/are 1,9,37,38 and 43-45.
3. ☒ The drawings filed on 09 April 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

Philip C Tucker  
Primary Examiner  
Art Unit: 1712

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Thomas Mitchell on 8/17/04.

The application has been amended as follows:

In the specification, on page 6, after line 7, and before the section titled "Detailed Description of the Invention", insert:

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#### Brief Description of the Drawings

Figure 1 is a general reaction schematic showing the preparation of an ionic liquid used in the invention (first reaction), and acid generation (second reaction).

Figure 2 illustrates four examples of ionic liquids employed in the fluids of the invention: 1-ethyl-3-methylimidazolium tetrachloroaluminate, 1-butylpyridinium nitrate, 1-ethyl-3-methylimidazolium tetrafluoroborate, and 1-butylpyridinium hexafluorophosphate.

Figure 3 illustrates 1-ethyl-3-methylimidazolium chloride reacting with aluminum trichloride to form 1-ethyl-3-methylimidazolium tetrachloroaluminate (first reaction) and the further reaction of that ionic liquid with water to form acid (second reaction).

Figure 4 shows several particularly preferred ionic liquids employed in the invention, further identified by laboratory designations for reference in the description hereinafter.

Figure 5 illustrates laboratory results comparing the dissolution of  $\text{BaSO}_4$  upon contact with a conventional system (an EDTA-based fluid), with the dissolution of  $\text{BaSO}_4$  by an ionic liquid (IL) or fluid of the invention.

Figure 6 illustrates laboratory results comparing the rate of dissolution of  $\text{BaSO}_4$  upon contact with a conventional system (an EDTA-based fluid), with the dissolution of  $\text{BaSO}_4$  by an IL or a fluid of the invention, and further illustrates dissolution of  $\text{BaSO}_4$  by an IL or a fluid of the invention at different temperatures and using different  $\text{BaSO}_4$  particle size distributions.

Figure 7 illustrates laboratory results comparing the dissolution rate of  $\text{BaSO}_4$  upon contact with an IL of the invention, at two different temperatures.

Figure 8 illustrates laboratory results comparing the dissolution rate of three different types of common wellbore/matrix scales, at about 66 °C. --

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip C Tucker whose telephone number is 571-272-1095. The examiner can normally be reached on Monday - Friday, Flexible schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Philip C Tucker  
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PCT-3091